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An

Inaugural Dissertation

Upon the

Cholera or Bilious Diarrhœa

Of

Infants

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Cholera, &c.

Cholera Infantum a disease peculiar to our country, one fraught with the most injurious consequences has since the introduction of Calomel for its cure (by Dr Miller) been disarmed of some of its former violence. Yet notwithstanding this "Sampson" of remedies, it still remains the dread of Parents, the Bane of Children, the Scourge of Cities, particularly in the Middle, Southern portions of the United States.

It makes its appearance with the hot Weather, not being much influenced by the time whether it be in June July August or September, and continues as long as the heat lasts. It commences, in severe cases, suddenly with vomiting, purging, the matter discharged having different appearances in different cases or in the same case at different times

That discharged by the mouth consists first of the contents of the Stomach; afterwards principally of the secretions of that Organ & of the Liver. The discharges from the Bowels are sometimes copious and watery; at other times small in quantity: of a dark or light green colour: at others again of mucus or gramous, or consisting of lumps mixed with a more fluid substance with or without much fetor. At a more advanced period they often consist of the food but little altered by digestion.

In other instances either the vomiting or purging is entirely absent: But as a general rule from the commencement there is much exhaustion with a cold & clammy surface, particularly of the extremities, although the abdomen & head may be preternaturally warm.

The Pulse is diminished in force & increased in frequency; the fever is evidently of the remittent kind & the exacerbations take place for the most part in the Evening with severe pain in the head: The countenance is pale & inanimate, the Eye and the neck shrunk, the thirst insatiable and all drink refused but cold water. The Tongue is furred

white & in the worst cases aphthæ appear in the mouth —

Sometimes there is a loathing of all food; at others an unnatural voraciousness perceptible to the Mother when the Child is taking the Breast — Eventually symptoms of Cerebral affection occur attended with Convulsions which are said frequently to be owing to functional derangement of the Liver —

Of all the causes of this complaint Atmospheric heat combined with the foul Air which is present in large Cities, particularly in the crowded parts where ventilation is badly effected, are the most efficient; for without these Cholera does not frequently take place; & in proportion to the degree of the one & the foulness of the other is the frequency & violence of the disease, though neither of them alone has the power of producing it — Another very fruitful source of this disease & one ~~fear~~ that has been too much overlooked, is occasioned by the want of the due ventilation of Chambers. Many Parents during the hot weather allow the Windows of the Chambers to be hoisted

and from a common idea that night air is less injurious when a current is allowed to pass through open the doors should there be no windows on the opposite side & are particularly careful that the child should be placed in a situation most favourable for the draught the cold air being thus directly applied to the cutaneous vessels already morbidly affected by the excessive heat & fatigue which the child may have undergone the day previous, the circulation on the surface is impeded, the blood is driven from the circumference to the centre producing internal congestion & diminution of the Biliary Secretions

While some Parents expose their Children in this way others are equally imprudent in running into the opposite extreme— they sedulously guard every avenue, shutting both windows & Doors & from their solicitude & mistaken kindness provide for their Children soft beds and carefully replace the clothes when kicked off by the uneasy Child & in some instances to be out of all danger the Child is placed between its Parents: thus it is exposed to

the most efficient cause of Cholera: by this means the cutaneous vessels are excited into inordinate action; & the hepatic system by its sympathy with the surface partakes of that action: and accordingly aided by debilitated and exhausted in them & general languor in the system: from the debility thus induced or by the sudden application of Cold in this debilitated state the action of these parts is checked the Blood is driven from the surface & accumulates in the portal system —

Next to this may be considered dentition, an impoverished diet, the use of Crude Aliment and a want of cleanliness, all of which may be considered rather as predisposing causes —

Dentition independent of other causes is sufficient to produce irritation in the Alimentary Canal & hence in great measure the peculiar liability of Children about the age of teething to this complaint. Between the 5th month & the end of the 2nd year is

the most usual period for Children to be attacked with Cholera; although some have been attacked at the age of a few weeks — An impoverished diet or vapid aliment predisposes to this disease by the Atony which they produce in the Alimentary Canal and this imparted to the whole system rendering it more liable to be acted on by the exciting causes of the complaint —

That a want of Cleanliness is injurious is evident from the beneficial effects of Bathing of any kind — though it must be allowed that the Cold Bath from its Tonic power is superior to any other. Yet the obstruction of the pores on the surface by the coat of dirt has an injurious effect by impeding the insensible perspiration and consequently the Intestinal Canal will suffer in proportion

That the seat of Cholera Infantum is the same as that of our Autumnal diseases is probably correct; but that they are produced by the same causes arise in the same situations and are cured by the same

means is not so clear; however between Cholera, Dysentery and Bilious Diarrhœa &c there is considerable resemblance. When the Liver and Portal System are sufficiently excited & congestion is produced by the above causes. Nature attempts to relieve herself by an increased action in the secretory vessels of the Liver, Stomach, or Intestines; pouring out fluids different in quality & quantity from what is natural, proving of course irritating.

When this increased action takes place in the Liver in the mucous membrane of the Stomach or Intestines with irritation of the parts we have Cholera. If in the Liver alone, Bilious Diarrhœa, or if in the Intestines attended with more Inflammation it constitutes Dysentery. Accordingly we find one of our best remedies in Cholera equally well adapted to either of these diseases viz: Calomel Ipecacuanha & Opium in minute quantities combined. The Modus operandi of which is plain.

that Congestion of the Liver and Portal system takes place with irritation of the Mucous Membrane of the Alimentary Canal is evident from the Symptoms & is still further proven by Post Mortem examinations –

Before entering on the treatment it may be necessary to state that no treatment is of such uniform success as removal to the Country in every stage of the disease – To attempt the cure of Cholera in the same vitiated atmosphere which gave rise to it is as difficult as it is to cure a Malignant disease in the Wards of an Hospital

Dr Rush says "of the many hundred Children whom he has sent into the Country in every stage of the disease only three died" It is extremely agreeable continues he) to see the little sufferers revive as soon as they escape from the City air and inspire the pure air of the Country – Nor should we hesitate in the last stage to send them, for the same Author mentions one case that recovered after convulsions had taken place –

When a Country residence cannot be procured they should ride out of the City daily in an open Carriage or let them be exposed to the air of a River & particularly to the motion of a Boat. Dr Chapman says he has known incessant Vomiting & Purging checked by taking them across the river every day—
It was the custom of my preceptor Dr Parrish when Physician to the Dispensary to recommend Mothers who had Children threatened with or labouring under this complaint to take their work & go with their Children into the State House Yard & spend the day or if near the River to cross & sit in the Shade of the Woods—
The indications in Cholera Infantum are
1st To allay Vomiting & irritability of the Bowels
2nd To promote healthy secretions of the Liver, of the mucus membrane of the Bowels; and at the same time increase the circulation in the Cutaneous Vessels or in other words to invite back the force of the Circulation from the internal to the external surface & thereby

keep it by the judicious application of appropriate remedies
3rd To check alvine evacuations should they still continue
4th Tonic treatment to the System

Treatment

This may be commenced in mild cases where the Vomiting is absent with a combination of Castor Oil with some Laudanum to carry off the irritating contents of the Intestinal Canal. But in severe cases where there is excessive Vomiting & irritability of the Stomach this will not remain; but we must first allay irritability by fomentations to the Epigastrium &c If there should be much restlessness with a hot dry skin & flushed face & the Child be vigorous the Lancet is highly necessary for says Professor Chapman This remedy is too often fatally withheld but in this we must be guided in great measure by the ability of the Child to bear it & by the nature of the prevailing Epidemic. Thus Dr Rush found it necessary to bleed & in some instances two or three times in Cholera immediately succeeding the

Yellow Fever of 1793, a disease that required so much bleeding - indeed what determined him to bleed was among other reasons "the character of the diseases which had preceded the Yellow Fever - they were all more or less inflammatory even the Scarlatina Anginosa had partaken so much of that diathesis as to require bleeding".

On the other hand during the prevalence of Pneumonia Typhoides most other disorders partook so much of its nature that the Lancet was nearly laid aside

In the cases above stated attended with much excitement the bleeding may be followed by an Emetic of Ipecacuanha; this will evacuate the Stomach of any irritating contents, will equalise the circulation at the same time tend to the surface producing relaxation and relieve congestion of the internal viscera.

Dr Miller says "As the Cholera of Children is a febrile disease, and the surface of the body, often heated beyond the proper point, it will be advisable to expose all such parts of the skin as feel too warm to the hand, to a

stream of cool air, or to bathe them in cool water. Several times a day the patient should be washed with vinegar and water, salt & water, or water alone, by means of a sponge, while lies in bed, with as little motion, disturbance or fatigue as possible — But in such cases perhaps the warm Bath is to be preferred as it would have a tendency to equalize the temperature more completely —

But in Cholera as it mostly occurs the practice of bleeding is not only unnecessary but injurious — it is contraindicated by the weak pulse by the cold Clammy surface, the shrunk sick extremities & by the general prostration of the system: the little patient will look in the course of a day or two as though there was nothing but skin upon its bones — In such cases Emetics would appear not to be indicated from the profuse vomiting which had already taken place attended with spasms & the great prostration of the system — Cerat that cold water is not demanded is evident from the already too cool surface —

Our first object here is to allay excessive ~~extreme~~ vomiting —

for this purpose various remedies have been recommended - the milder ones might be resorted to if the urgency of the case would admit of it - as Chicken Water and other mild diluents as recommended by Sydenham; the Chicken Water given both by the mouth and rectum was particularly partial to. Toast Water made with Oat bread was a favourite remedy of Dr Douglas he even declares that he never knew it rejected in any case of Cholera - A Cold infusion of Mentha Sativa, equal parts of Lime Water & Milk, the citrate of Potash in small quantities, a solution of the Bicarbonate of Potash with a few drops of Laudanum or Paregoric Elixir - in severe instances, Dr Howel states, by this remedy alone he has been enabled to subdue the disease & where it is not successful it allays pain and removes the distressing symptoms -

The Acids of Turpentine is as highly recommended by Dr Cardie he says that he has not in any single instance in which he has employed it failed

in speedily checking the ~~discharge~~ disordered action of the stomach nor; was the good effects confined merely to this but corrected the vitiated secretions of the Intestines, checked the griping and irritating stools, and produced a tendency to more healthy action - the doses in which he gave it were from 10 to 30 drops according to the age of the Patient, to be repeated 3 or 4 times in the course of the day -

A solution of Sulphate of Magnesia is also supposed to have some peculiar quality in allaying irritability of the stomach; in cases of excessive vomiting attended with spasms, severe griping, thirst &c Nitric Acid given in doses of a few drops every two hours has removed all the distressing symptoms and restored appetite & sleep - see Stewart's case Medical Museum Vol 3. no 2) - In checking vomiting it is necessary at the same time to use external applications - if the feet are cold as is mostly the case care should be taken to restore heat and action in them by

suitable covering and until this is effected we cannot expect success — But some of the most powerful antiemetics are yet to be enumerated — these are a spiced plaster composed of powered Cinnamon Cloves and Ginger mixed up with Honey & Brandy — and Opiates & a Blister to the Epigastric region — It may be asked why so many remedies of the same nature and nearly equal in power should be mentioned — to this it might be answered not that they are all to be used in the same case, but to afford room for selection as they may best suit the nature of the case or can be more readily procured —

As soon as the vomiting has been allayed by one or by a combination of the above remedies or so soon as the irritability of the stomach will permit, we must attend to the second and most important indication viz. to correct the secretions of the Liver and of the mucous membrane of the Alimentary Canal & increase the circulation in the Cutaneous Vessels — for this

purpose the following formula is peculiarly well adapted.
Calomel iij grs. Ipecacuanha ij grs. Opium i gr. divide into
8 powders one to be given every one or two hours for one day
and the following morning administer a dose of Castor
Oil or Syrup of Rhubarb or if there be much acidity in
the primæ viæ denoted by green frothy stools & acid
eructations a combination of Calcined Magnesia with
powdered Rhubarb The effects of this plan are plain.
The Calomel professes some peculiar property of correcting
the secretions of the Liver whether they are increased or
diminished in quantity or vitiated in quality. It is also
thought to correct the secretions of the mucous surfaces.
the Opium allays the irritability of the Stomach and
Bowels and the Ipecacuanha tends to the surface,
increasing the circulation in the extreme vessels. thus
equilibrium is restored to the vascular system & conges-
tion of the internal viscera removed and irregular ex-
citement equalised. Co-operating with the above prescrip-
tion the Warm Bath is a most important remedy and

one that should never be neglected, but as its effects are evanescent it should be repeated at least once every 24 hours sometimes twice or three times till the skin assumes a temperature equal to that of health – This is an important indication & one that is too often neglected –

In recent cases Blisters applied to the Wrists, if there is great prostration, or to the ankles will often succeed in rousing the system from its lethargic state and the disease will assume a more manageable form –

By these means we shall mostly either arrest the disease and prevent its making further ravages upon the system or it will pass, in a few days in some instances, or in other weeks, into a simple Diarrhoea attended with Tormina & Tenesmus – The best method of allaying the last mentioned symptoms is by injections of Laudanum united with flax-seed tea or any other convenient mucilage or some Animal oil as melted Butter or Lard – to simply check the loose quent discharge the chalk julep combined with Kino

is very effectual — though there are many vegetable articles suitable for the same purpose as a decoction of Dewberry root or of Logwood, the spotted Cranes bill or Geranium Maculatum boiled in Milk, Catechu &c. &c

To impart tone to the system the different Tonics may be given — the best are Colomba, which has been thought peculiarly adapted to all bowel complaints — the preparation of Steel alone or combined with Bark or with a Mineral acidity may be given in the following manner — Bark ℥ss powdered Cinnamon ʒij Lime Water ℥viij In some cases the alkaline mixture may be used at the same time with the Tonics composed of Salt of Tartar ʒj Laudanum ♈j gtts P. G. Arabic ʒj aqua Cinnamon ℥ss. A teaspoonful given every hour —

When the Stomach is too irritable to bear the use of Tonics & yet they are indicated the Bark Jacket should be applied — the diet should be nutritious consisting of Breast Milk, nothing being more wholesome than the Milk of a healthy Mother — when this cannot be

prepared fresh Cows Milk thickened with Arrowroot & sweetened with Loaf Sugar, also Essence of Beef in small quantities & frequently repeated - When there is no particular indication for any medicine great advantage has been derived from some article of food, in support of which, when it has assumed a Chronic form, some singular facts have been related by Dr Rush & Wistar and others - In this debilitated state the appetite for food has been suddenly awakened & the Child has partaken of some stimulating article as Salt Ham, Salt Herring, rich gravy, or even Butter itself & the appetite being indulged has speedily recovered. Dr Wistar was in the habit of tempting his Patients to eat by placing articles of this description before them but in many he found no appetite at all -

To allay the excessive thirst mucilaginous drinks or a solution of the Bi-Carbonate of Potash or Seltzer Water given in small quantities & frequently repeated suit the best - As the case advances & should debility become more apparent something

more stimulating will be demanded as Wine and Water. Dr Wistar used to recommend Milk Punch made with Brandy. Scalded Lemonade was a favourite remedy of Dr Griffitts

To prevent Cholera the child should have as much Country air as possible – the diet should consist of mild nutritious food accompanied with a small portion of good Wine and occasionally a little of the fat of bacon – all unripe articles particularly unripe fruit should be avoided – the clothing should be attended to, particularly the feet – keeping them warm by wearing woollen stockings or socks – flannel should be worn next the skin –
The child should sleep on a mattress or on Blankets spread on the floor or sacking bottom – the chamber should be well ventilated at the same time not allowing a current of air to pass over the bed – this may be done by opening a door or a window in a remote part of the room – the chimney should be free from obstruction

The Cold Bath daily used is the most effectual prophylactic and one whose benefits are beginning to be duly appreciated - it preserves cleanliness of the surface, it imparts tone to the system and renders the cutaneous vessels less liable to be affected by vicissitudes of weather - the most proper time for using it is before breakfast when the child is free from perspiration - About the period of Dentition constant attention should be paid to the gums & when turnid they should be lanced - by this means the child avoids much pain and irritation: the common objections to this that the Teeth are cut harder is groundless, for cicatrices should they form before the Tooth comes through are much more readily absorbed than original structure - Where irritation has arisen from Dentition as is frequently the case in the bowel complaints of Children it will often be relieved by Blisters behind the ears this was taught Dr Parrisle from having observed bowel complaints of children, cutaneous eruptions, or affections of the head, to follow after the naturally formed sores behind

the ears head dried up—this natural process he imitated and with much succes in their complaints, by applying Blisters particularly if upon inquiry he ascertained that a sore in that situation had been cured—